

What is claimed is:

1. A pipe fitting plug comprising:
  - a body which is watertight;
  - an expandable sealing means surrounding said body for forming a watertight seal between said body and an interior surface of a pipe fitting hub;
  - an expandable retaining means for engaging said interior surface of said pipe fitting hub and retaining said plug in said pipe fitting hub; and
  - one or more adjusting means for causing said sealing means and said retaining means to engage and disengage said interior surface of said pipe fitting hub.
2. The pipe fitting plug of claim 1 wherein said sealing means comprises:
  - an expandable rubber seal; and
  - two surfaces which compress said expandable rubber seal causing said expandable rubber seal to expand.
3. The pipe fitting plug of claim 1 wherein said sealing means comprises an expandable rubber bladder.

4. The pipe fitting plug of claim 1 wherein said retaining means comprises:

one or more piercing edges which are movable to engage said interior surface of said pipe fitting hub and retain said plug in said pipe fitting hub;

a wedging means comprising angled surfaces capable of extending said retaining ring; and

an O-ring positioned within said wedging means.

5. The pipe fitting plug of claim 1 wherein said retaining means comprises:

one or more expandable pins which are movable to engage said interior surface of said pipe fitting hub and retain said plug in said pipe fitting hub; and

a tapered cone comprising angled surfaces capable of extending said expandable pins.

6. The pipe fitting plug of claim 1 wherein said retaining means comprises:

grit type particles located within a recess of said sealing means,

wherein said grit type particles are movable to engage said interior surface of said pipe fitting hub and retain said plug in said pipe fitting hub.

7. The pipe fitting plug of claim 1 wherein there is one said adjusting means which operates on both said retaining means and said sealing means such that both said retaining means and said sealing means expand simultaneously and contract simultaneously.

8. The pipe fitting plug of claim 7 wherein said adjusting means comprises:

an end piece affixed to one end of said body, a housing which slides on the other end of said body, and a controlling force means which extends from said body to said housing; or

an inner chamber within said body, an air valve in communication with said inner chamber and one or more air ports in communication with said sealing means and said inner chamber.

9. The pipe fitting plug of claim 1 wherein said retaining means and said sealing means are located within a recess of said body and wherein said recess is created between an end piece of said body and a housing which surrounds said body.

10. A pipe fitting plug comprising:

(a) a body comprising an end piece at one end of said body;

(b) a housing surrounding said body at the other end of said body;

(c) an expandable sealing means surrounding said body and positioned between said end piece and said housing; and

(d) an expandable retaining means, said retaining means positioned adjacent said sealing means and between said end piece and said housing,

wherein said end piece and said housing are capable of exerting a force against said sealing means in order to expand said sealing means to form a seal between said sealing means and an inside of a pipe fitting hub, and

wherein said end piece and said housing are capable of exerting a force against said retaining means in order to engage said retaining means and said inside of a pipe fitting hub.

11. The pipe fitting plug of claim 10 wherein said sealing means comprises:

an expandable rubber seal; and

two surfaces which compress said expandable rubber seal causing said expandable rubber seal to expand.

12. The pipe fitting plug of claim 10, wherein said retaining means comprises:

a "V"-shaped retaining ring having piercing edges surrounding said body;

a wedging means comprising angled surfaces capable of extending said retaining means; and

an O-ring positioned within said "V" shaped retaining ring.

13. The pipe fitting plug of claim 10, wherein said retaining means comprises:

one or more expandable pins which are movable to engage said interior surface of said pipe fitting hub and retain said plug in said pipe fitting hub; and

a tapered cone comprising angled surfaces capable of extending said expandable pins.

14. The pipe fitting plug of claim 10, wherein a controlling force means is affixed to said body and protrudes through said housing and said end piece, and a fastener attaches to said controlling force means and is capable of exerting a force against said housing.

15. The pipe fitting plug of claim 12, wherein said wedging means comprises two rings having a flat edge on one side and a beveled edge on an opposing side.

16. A pipe fitting plug comprising:

(a) a body comprising an inner chamber;

(b) an expandable sealing means surrounding said body and in communication with said inner chamber through one or more air ports, said sealing means positioned within a recess of said body;

(c) an expandable retaining means, said retaining means positioned within a recess of said sealing means; and

(d) one or more air valves,

wherein said one or more air valves are capable of expanding said sealing means using said one or more air ports in order to expand said sealing means to form a seal between said sealing means and said inside of a pipe fitting hub, and

wherein said one or more air valves are capable of expanding said retaining means using said one or more air ports in order to engage said retaining means and said inside of a pipe fitting hub.

17. The pipe fitting plug of claim 16 wherein said sealing means comprises:

an expandable rubber seal; and

two surfaces which compress said expandable rubber seal causing said expandable rubber seal to expand.

18. The pipe fitting plug of claim 16 wherein said retaining means comprises grit type particles and wherein said sealing means is an inflatable bladder.

19. The pipe fitting plug of claim 16, wherein a controlling force means is affixed to said body and protrudes through said housing and said end piece, a rubber washer is positioned between said controlling force means and said end piece in order to provide a leak proof seal, and a nylon washer is positioned between said hex nut and said housing in order to provide a bearing surface for said hex nut.

20. A method for sealing the open fitting hub of a pipe comprising:

(a) inserting a pipe fitting plug into a pipe fitting hub,

wherein said pipe fitting plug comprises:

a body which is watertight;

a sealing means surrounding said body for forming a watertight seal between said body and an interior surface of a pipe fitting hub;

an expandable retaining means for engaging said interior surface of said pipe fitting hub and retaining said plug in said pipe fitting hub; and

one or more adjusting means for causing said sealing means and said retaining means to engage and disengage said interior surface of said pipe fitting hub; and

(b) adjusting said adjusting means to cause said sealing means to form a watertight seal and said retaining means to engage said interior of said pipe fitting hub.